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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,043	01/29/2004	Shingo Yamaguchi	042058	2574

38834   7590   09/18/2007
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EXAMINER
PHAM, THOMAS K

ART UNIT	PAPER NUMBER
2121	

MAIL DATE	DELIVERY MODE
09/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/766,043	YAMAGUCHI ET AL.
	Examiner	Art Unit	
	Thomas K. Pham	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 July 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-26</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>24-26</u> is/are allowed.

6)☒ Claim(s) <u>1-6,8-18,20 and 21</u> is/are rejected.

7)☒ Claim(s) <u>7,19,22 and 23</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Response to Amendment

1.   This is in response to the amendment file 07/17/2007.

2.   Claims 24-26 are allowed.

3.   Claims 7, 19, 22 and 23 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

4.   Applicants' arguments, with respect to claims 1-6, 8-18, 20 and 21, have been considered

but are mood in view of the new ground(s) of rejection presented in this Office action.

Quotations of U.S. Code Title 35

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

The claims and only the claims form the metes and bounds of the invention. "Office personnel

are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In

re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir 1997). Limitations

appearing in the specification but not recited in the claim are not read into the claim. In re Prater,

415 F.2d 1393, 1404-05, 162 USPQ541, 550-551 (CCPA 1969)" (MPEP p2100-8, c 2, I 45-48; p

2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest

reasonable sense. The Examiner will reference prior art using terminology familiar to one of

ordinary skill in the art. Such an approach is broad in concept and can be either explicit or

implicit in meaning.

Claim Rejections - 35 USC § 103

6.   Claims 1-6, 8-18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over U.S. Patent No. 6,772,038 ("Kadono") in view of U.S. Patent No. 5,465,221 ("Merat").

Regarding claim 1

Kadono teaches the invention including a working control device comprising: a configuration

characteristic extraction unit obtaining configuration information about characteristics of a three-

dimensional configuration from design data of an object workpiece (see Col. 2 lines 35-45); a

working case storage unit storing working conditions (see Col. 7 lines 40-50, "machine condition

database 9"); a case searching unit searching out the working case from the working case storage

unit on the basis of the configuration information (see Col. 8 lines 14-17, "machine condition

database 9 is searched"); a working condition setting unit determining the working conditions

based on the working case searched out by the case searching unit (see Col. 8 lines 17-31); and a

control unit controlling a working machine on the basis of the working conditions (see Col. 9

lines 33-43).

Kadono does not specifically disclose the working case of a working of a prior formed

object workpiece conducted in the past.

However, Merat teaches a Rapid Design System which is a feature-based Computer

Aided Design (CAD) system that allows user to retrieve previously design workpieces conducted

in the past (see Col. 7 lines 18-38) for the purpose of finding more ways to improve new designs

by looking back at past designs for the problems encountered and/or how they were resolved.

The claim would have been obvious is that "a person of ordinary skill in the art would

have been motivated to combine the prior art to achieve the claimed invention and that there

would have been a reasonable expectation of success". It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the storing of previously designed workpieces of Merat with the design system of Kadono because it would provide a reasonable expectation of success by using past designs to learn more ways for improving on new designs.

Regarding claim 20

Kadono teaches the invention including a computer readable medium comprising a working control program for making a computer execute steps of: obtaining configuration information about characteristics of a three-dimensional configuration from design data of an object workpiece (see Col. 2 lines 35-45); searching out a working case on the basis of the configuration information from a working case storage unit storing working conditions (see Col. 7 lines 40-50, "machine condition database 9" and Col. 8 lines 14-17, "machine condition database 9 is searched"); determining the working conditions based on the working case (see Col. 2 line 64 to Col. 3 line 4); and controlling a working machine on the basis of the working conditions (see Col. 9 lines 33-43).

Kadono does not specifically disclose the working case of a working of a prior formed object workpiece conducted in the past.

However, Merat teaches a Rapid Design System which is a feature-based Computer Aided Design (CAD) system that allows user to retrieve previously design workpieces conducted in the past (see Col. 7 lines 18-38) for the purpose of finding more ways to improve new designs by looking back at past designs for the problems encountered and/or how they were resolved.

The claim would have been obvious is that "a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success". It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the storing of previously designed workpieces of Merat with the design system of Kadono because it would provide a reasonable expectation of success by using past designs to learn more ways for improving on new designs.

Regarding claim 21

Kadono teaches the invention including a working control system comprising a working machine and a working control device for controlling the working machine, the working control device including: a configuration characteristic extraction unit obtaining configuration information about characteristics of a three-dimensional configuration from design data of an object workpiece (see Col. 2 lines 35-45); a working case storage unit storing working conditions (see Col. 7 lines 40-50, "machine condition database 9"); a case searching unit searching out the working case from the working case storage unit on the basis of the configuration information (see Col. 8 lines 14-17, "machine condition database 9 is searched"); a working condition setting unit determining the working conditions based on the working case searched out by the case searching unit (see Col. 2 line 64 to Col. 3 line 4); and a control unit controlling a working machine on the basis of the working conditions (see Col. 9 lines 33-43).

Kadono does not specifically disclose the working case of a working of a prior formed object workpiece conducted in the past.

However, Merat teaches a Rapid Design System which is a feature-based Computer Aided Design (CAD) system that allows user to retrieve previously design workpieces conducted in the past (see Col. 7 lines 18-38) for the purpose of finding more ways to improve new designs by looking back at past designs for the problems encountered and/or how they were resolved.

The claim would have been obvious is that "a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success". It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the storing of previously designed workpieces of Merat with the design system of Kadono because it would provide a reasonable expectation of success by using past designs to learn more ways for improving on new designs.

Regarding claim 2

Kadono teaches a judgment criterion storage unit stored with information serving as a judgment criterion for the working conditions (see Col. 8 lines 14-21), wherein the working condition setting unit determines the working conditions based on the information of the judgment criterion storage unit and on the working case searched out by the case searching unit (see Col. 8 lines 21-31).

Regarding claim 3

Kadono teaches a pre-working input unit accepting an input of information about the object workpiece (see Col. 5 lines 6-16), wherein the working condition setting unit determines the

working conditions based on the information given from the pre-working input unit and on the

design data (see Col. 3 lines 58-64).

Regarding claim 4

Kadono teaches a monitoring unit obtaining information of the working machine when the

control unit controls based on the working conditions (see Col. 8 lines 51-63); and a working

case registration unit having the working case storage unit stored with the working machine

information obtained by the monitoring unit in a way that makes it as a working case mapping to

the configuration information (see Col. 8 lines 63-67).

Regarding claim 5

Kadono teaches a monitoring unit obtaining information of the working machine when the

control unit controls based on the working conditions (see Col. 8 lines 51-63); a working case

registration unit having the working case storage unit stored with the working machine

information obtained by the monitoring unit in a way that makes it as a working case mapping to

the configuration information (see Col. 8 lines 63-67); and a post-working input unit accepting

an input of information about whether the working is preferable or not, wherein the working case

registration unit has the working case storage unit stored with the working case, corresponding to

the information accepted by the post-working input unit (see Col. 9 lines 9-32).

Regarding claim 6

Kadono teaches wherein the configuration characteristic extraction unit divides a surface of the

object workpiece represented by the design data into polygons, obtains coordinates of vertexes of

these polygons as X-, Y- and Z-values in the case of being expressed by values in X-, Y- and Z-

direction, obtains minimum and maximum X-values, minimum and maximum Y-values and

minimum and maximum Z-values among all the vertexes, obtains a maximum X-axis directional length by subtracting the minimum X-value from the maximum X-value, obtains a maximum Y-axis directional length by subtracting the minimum Y-value from the maximum Y-value, and obtains a maximum Z-axis directional length by subtracting the minimum Z-value from the maximum Z-value (see Col. 6 lines 40-65).

Regarding claim 8

Kadono teaches wherein the configuration characteristic extraction unit judges whether a normal line of the polygon is parallel with a working axis or not, and classifies the polygon exhibiting the parallelism according to a value in the Z-axis direction (see Col. 7 lines 1-6).

Regarding claim 9

Kadono teaches wherein the configuration characteristic extraction unit extracts concave shape parts of the object workpiece represented by the design data, and obtains a concave shape radius dimension having a minimum radius in the concave shape parts (see Col. 7 lines 6-12).

Regarding claim 10

Kadono teaches wherein the configuration characteristic extraction unit extracts concave shape parts of the object workpiece represented by the design data, classifies the concave shape parts according to a radius dimension (see Col. 7 lines 6-12), obtains an areal size of the concave shape part according to this radius dimension, and obtains a radius dimension having a maximum areal size (see Col. 8 lines 21-31).

Regarding claim 11

Kadono teaches wherein the configuration characteristic extraction unit divides a surface of the object workpiece represented by the design data into polygons, compares, in the case of

representing the coordinates of the vertexes of these polygons in values in the X- Y- and Z-directions, Z-axis values of the vertexes of the polygons excluding the polygons having fitting surfaces to the working machine and the polygons abutting on these fitting surfaces, and obtains a minimum Z-axis value as a maximum depth of the object workpiece (see Col. 6 lines 40-65).

Regarding claim 12

Kadono teaches wherein the configuration characteristic extraction unit divides a surface of the object workpiece represented by the design data into polygons (see Col. 6 lines 55-65), judges whether or not a normal line of the polygon is parallel with the working axis, classifies the polygons into the polygons exhibiting the parallelism and the polygons exhibiting no parallelism (see Col. 7 lines 1-6), obtains a working range by grouping the polygons including shared edges with respect to each classification, and obtains the edges, as a working range boundary line, which are not shared with other polygons in each group (see Col. 7 lines 40-50).

Regarding claim 13

Kadono teaches wherein the configuration characteristic extraction unit obtains blank dimensions by adding a working margin in the working case searched out by the case searching unit to the maximum X-axis directional length, the maximum Y-axis directional length and the maximum Z-axis directional length (see Col. 3 lines 9-23).

Regarding claim 14

Kadono teaches a monitoring unit obtaining information of the working machine when the control unit performs the control based on the working conditions (see Col. 8 lines 51-63); a post-working input unit accepting an input of information about whether a result of the working is preferable or not when performing the control (see Col. 9 lines 9-32); and a working case

registration unit having the working case storage unit stored with the working machine information obtained by the monitoring unit and information about whether a result of the working is preferable or not in a way that makes it as a working case mapping to the configuration information (see Col. 8 lines 63-67), wherein in case the result of the working in the working case searched out by the case searching unit is preferable, the working condition setting unit determines the working conditions based on the working case (see Col. 8 lines 21-31).

Regarding claim 15

Kadono teaches wherein the case searching unit searches the working case database by using the configuration information obtained from the configuration characteristic extraction unit as a search key, and thus searches out a working case mapping to the configuration information falling within a predetermined range (see Col. 8 lines 14-31).

Regarding claim 16

Kadono teaches wherein the working machine is a cutting machine, the monitoring unit measures a main shaft load state of the working machine, and the control unit, in case the measured main shaft load is out of a predetermined range, adjusts a feeding speed of the cutting machine so as to fall within the predetermined range (see Col. 8 lines 51-67).

Regarding claim 17

Kadono teaches wherein the working machine is a cutting machine, the monitoring unit measures a main shaft load state of the working machine, and the control unit, in case the measured main shaft load is out of a predetermined range, adjusts a the number of revolutions of the main shaft of the cutting machine so as to fall within the predetermined range (see Col. 9 lines 9-32).

Regarding claim 18

Kadono teaches wherein in the case of using a plurality of tools, the working condition setting unit compares a cutting residual quantity of the tool to be used ahead with an allowable range of the tool to be used next, and, if the cutting residual quantity of the tool to be used ahead exceeds the allowable range of the next tool, sets so that the cutting residual quantity of the tool to be used head falls within the allowable range of the next tool by changing, adding or deleting the tool (see Col. 9 lines 44-58).

Response to Arguments

In the remarks, applicant's argues that cited prior art fails to teach:

I)   "a working case storage unit storing working conditions, as a working case, of a working of a prior formed workpiece conducted in the past" as to claims 1, 20 and 21.

In response to applicant's arguments,

I)   Kadono (USPN 6,772,038) teaches a working case storage unit storing working conditions (see Col. 7 lines 40-50, "machine condition database 9"). Kadono does not specifically disclose the working case of a working of a prior formed object workpiece conducted in the past.

However, newly cited prior art U.S. Patent No. 5,465,221 ("Merat") teaches a Rapid Design System which is a feature-based Computer Aided Design (CAD) system that allows user to retrieve previously design workpieces conducted in the past (see Col. 7 lines 18-38) for the

purpose of finding more ways to improve new designs by looking back at past designs for the problems encountered and/or how they were resolved.

The claim would have been obvious is that "a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success". It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the storing of previously designed workpieces of Merat with the design system of Kadono because it would provide a reasonable expectation of success by using past designs to learn more ways for improving on new designs.

If applicant disagrees with any factual findings by the Office, an effective traverse of a rejection based wholly or partially on such findings must includes a reasoned statement explaining why the applicant believes the Office has erred substantively as to the factual findings. A mere statement or argument that the Office has not established a prima facie case of obviousness or that the Office's reliance on common knowledge is unsupported by documentary evidence will not be considered substantively adequate to rebut the rejection or an effective traverse of the rejection under 37 CFR 1.111(b).
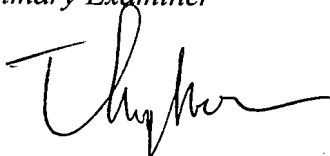
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*, whose telephone number is (571) 272-3689, Monday - Friday from 7:30 AM - 4:00 PM EST or contact Supervisor *Mr. Anthony Knight* at (571) 272-3687.

Any response to this office action should be mailed to: **Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.** Responses may also be faxed to the **official fax number (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas Pham
Primary Examiner

September 6, 2007